

Claims:

1. A thermal transfer recording medium comprising:  
a substrate;  
a separation layer on said substrate, wherein the separation layer comprises a  
5 resin and a wax; and  
an ink layer on said separation layer, wherein the ink layer comprises a colorant  
and a metal salt of an ethylene-methacrylic acid copolymer, said metal salt comprising at  
least one metal salt component selected from the group consisting of a sodium salt of  
ethylene-methacrylic acid copolymer and a potassium salt of ethylene-methacrylic acid  
10 copolymer, and having a tensile strength(ASTM D 1708) of from 240kg/cm<sup>2</sup> to  
300kg/cm<sup>2</sup> and having a percentage elongation at break(ASTM D 1708) of from 410% to  
560%.
2. The thermal transfer recording medium as claimed in claim 1, wherein said  
15 wax comprises a polyethylene wax having a melting point (DSC method) of 120°C or  
above.
3. The thermal transfer recording medium as claimed in claim 2, wherein said  
polyethylene wax has particle diameter of 2  $\mu$  m or less.  
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4. The thermal transfer recording medium as claimed in claim 1, wherein said  
resin in the separation layer comprises a methyl methacrylate-butadiene copolymer.
5. The thermal transfer recording medium as claimed in claim 4, wherein said  
25 methyl methacrylate-butadiene copolymer has glass transition temperature of 0°C or less.
6. A thermal image transfer recording method comprising the steps of:  
bringing said thermal transfer recording medium as defined in claim 1 into  
contact with a receiving medium,  
30 said receiving medium comprising a substrate and a receiving layer thereon,  
wherein the receiving layer comprises an inorganic pigment and a resin, and

applying heat to said thermal transfer recording medium which is in contact with said receiving medium to transfer said ink layer of said thermal transfer recording medium to said receiving medium and form an image thereon.

5           7. The thermal transfer recording method as claimed in claim 6, wherein said inorganic pigment comprises a calcium ion and/or a magnesium ion, and said resin in said receiving layer comprises a metal salt of ethylene-methacrylic acid copolymer.

10           8. The thermal transfer recording method as claimed in claim 6, wherein said salt of ethylene-methacrylic acid copolymer is cross-linked using a epoxy compound as a cross-linking agent.

15           9. The thermal transfer recording method as claimed in claim 6, wherein said inorganic pigment in the receiving layer has particle diameter of from  $2.5 \mu\text{m}$  to  $4.0 \mu\text{m}$ .

20           10. The thermal transfer recording method as claimed in claim 6, wherein said inorganic pigment is included in the receiving layer in an amount of from 50% to 90% by weight based on total weight thereof.

          11. The thermal transfer recording method as claimed in claim 6, wherein said receiving layer further comprises a sodium salt of carboxylate modified polyvinyl alcohol.

25           12. The thermal transfer recording method as claimed in claim 6, wherein said receiving layer comprises a metal salt of ethylene-methacrylic acid copolymer, on said substrate.

30           13. The thermal transfer recording method as claimed in claim 6, wherein said metal salt of an ethylene-methacrylic acid copolymer, comprises at least one metal salt component selected from the group consisting of a sodium salt of ethylene-methacrylic

acid copolymer and a potassium salt of ethylene-methacrylic acid copolymer, and having a tensile strength (ASTM D 1708) of from 240kg/cm<sup>2</sup> to 300kg/cm<sup>2</sup> and having a percentage elongation at break (ASTM D 1708) of from 410% to 560%.

5           14. The thermal transfer recording method as claimed in claim 6, wherein the surface of said receiving layer has a smoothness of from 500 sec to 1500 sec when measured by the method JIS P-8119.

10           15. The thermal transfer recording method as claimed in claim 6, wherein said receiving layer has a area density of from 4g/m<sup>2</sup> to 8g/m<sup>2</sup>.

15           16. The thermal transfer recording method as claimed in claim 6, further comprising an under layer located between said substrate and said thermal transfer receiving layer.

17. The thermal transfer recording method as claimed in claim 6, wherein said thermal receiving medium comprises a lamination layer of synthetic paper, which comprising polypropylene and calcium carbonate.

20           18. The thermal transfer recording method as claimed in claim 6, further comprising an adhesive layer provided on a backside of said substrate, opposite to said thermal transfer receiving layer with respect to said substrate.

25           19. The thermal transfer recording method as claimed in claim 18, further comprising a releasable backing sheet provided on said adhesive layer.

20. A recorded medium prepared by the method of claim 6.

30           21. The recorded medium of claim 20, wherein said recorded medium is a recorded label.

22. A thermal transfer recording medium comprising:

a substrate; and

an ink layer on said substrate; wherein said ink layer comprises:

a colorant,

a metal salt of an ethylene-methacrylic acid copolymer, and

5 one or more diols and/or diol derivatives having an acetylene group.

23. The thermal transfer recording medium as claimed in claim 22, further comprising a separation layer between said substrate and said ink layer, wherein said separation layer comprises a resin and a wax.

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24. The thermal transfer recording medium as claimed in claim 23, wherein said separation layer further comprises one or more diols and/or diol derivatives having an acetylene bond.

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25. The thermal transfer recording medium as claimed in claim 23, wherein said ink layer has a thickness of from  $0.6\ \mu\text{m}$  to  $1.0\ \mu\text{m}$ ; and said separation layer has a thickness of from  $0.8\ \mu\text{m}$  to  $1.2\ \mu\text{m}$ .

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26. The thermal transfer recording medium as claimed in claim 23, wherein said resin comprises a methyl methacrylate-butadiene copolymer.

27. The thermal transfer recording medium as claimed in claim 26, wherein said methyl methacrylate-butadiene copolymer has glass transition temperature of  $0\ ^\circ\text{C}$  or less.

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28. The thermal transfer recording medium as claimed in claim 23, wherein said wax comprises a polyethylene wax.

29. The thermal transfer recording medium as claimed in claim 28, wherein said wax has a melting point (DSC method) of  $120\ ^\circ\text{C}$  or above.

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30. The thermal transfer recording medium as claimed in claim 28, wherein said

wax has a particle diameter of  $2\ \mu\text{m}$  or less.

31. A thermal transfer recording method comprising the step of:

contacting a thermal transfer recording medium as claimed in claim 22 and

5 a receiving medium which comprises a substrate and a receiving layer thereon, wherein the receiving layer comprises a resin and an inorganic pigment; and

heating an ink layer of the thermal transfer recording medium with a thermal head while the ink layer contacts the receiving layer to form a recorded layer on the substrate.

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32. The thermal transfer recording method as claimed in claim 31, wherein said inorganic pigment comprises a calcium ion and/or a magnesium ion, and said resin in the receiving layer comprises a salt of ethylene-methacrylic acid copolymer.

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33. The thermal transfer recording method as claimed in claim 32, wherein said salt of ethylene-methacrylic acid copolymer is crosslinked using a epoxy compound as a crosslinking agent.

34. The thermal transfer recording method as claimed in claim 31, wherein said  
20 inorganic pigment in said receiving layer has particle diameter of from  $2.5\ \mu\text{m}$  to  $4.0\ \mu\text{m}$ .

35. The thermal transfer recording method as claimed in claim 31, wherein the inorganic pigment is included in said receiving layer in an amount of from 50% to 90% by  
25 weight based on total weight thereof.

36. The thermal transfer recording method as claimed in claim 31, wherein the receiving layer further comprises a sodium salt of carboxylate modified polyvinyl alcohol.

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37. The thermal transfer recording method as claimed in claim 31, wherein the

surface of said receiving layer has a smoothness of from 500 sec to 1500 sec when measured by the method JIS P-8119.

38. The thermal transfer recording method as claimed in claim 31, wherein said  
5 receiving layer has an area density of from  $4\text{g/m}^2$  to  $8\text{g/m}^2$ .

39. The thermal transfer recording method as claimed in claim 22, wherein said  
receiving medium comprises a synthetic paper, which comprises polypropylene and  
calcium carbonate.

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40. The thermal transfer recording method as claimed in claim 31, further  
comprising an adhesive layer provided on a backside of said substrate, opposite to said  
receiving layer with respect to said substrate.

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41. The thermal transfer recording method as claimed in claim 40, further  
comprising a releasable backing sheet provided on said adhesive layer.

42. A recorded medium prepared by the method of claim 31.

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43. The recorded medium of claim 42, wherein said recorded medium is a  
recorded label.